

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (Currently amended) A method that facilitates one or more of minimum
2 spacing and width control during an optical proximity correction operation for a
3 mask that is used in manufacturing an integrated circuit, the method comprising:
4 considering a target edge of a first feature on the mask;
5 identifying a set of interacting edges in proximity to the target edge; and
6 performing the optical proximity correction operation, wherein performing
7 the optical proximity correction operation involves applying a first edge bias to
8 the target edge to compensate for optical effects in a resulting image of the target
9 edge;
10 wherein applying the first edge bias to the target edge involves:
11 calculating an available bias based on minimum spacing
12 requirements and/or minimum width requirements, and
13 allocating ~~an~~ the available bias between the first edge bias
14 for the target edge and a second edge bias for at least one edge in
15 the set of interacting edges; and
16 wherein the available bias is allocated based on relative weights assigned
17 to the target edge and the second edge.

1 2. (Original) The method of claim 1, wherein applying the first edge bias
2 can involve adding a positive edge bias that increases the size of the first feature
3 or adding a negative edge bias that decreases the size of the first feature.

1 3. (Original) The method of claim 1,
2 wherein the second edge belongs to a second feature so that the distance
3 between the target edge and the second edge defines a distance between the first
4 feature and the second feature;
5 wherein applying the first edge bias to the target edge involves satisfying a
6 minimum spacing requirement between the target edge and the second edge.

1 4. (Original) The method of claim 3, wherein applying the first edge bias
2 to the target edge additionally involves satisfying a minimum width requirement
3 between the target edge and an opposing edge of the first feature.

1 5. (Original) The method of claim 1, wherein the second edge is also an
2 edge of the first feature so that a distance between the target edge and the second
3 edge defines a distance across a gap between portions of the first feature.

1 6. (Original) The method of claim 1,
2 wherein the second edge is an opposing edge of the first feature so that a
3 distance between the target edge and the opposing edge defines a width of the first
4 feature; and
5 wherein applying the first edge bias to the target edge involves satisfying a
6 minimum width requirement for the first feature between the target edge and the
7 second edge.

1 7. (Original) The method of claim 1, wherein applying the first edge bias
2 to the target edge involves considering an edge type of the target edge and
3 considering an edge type of the second edge.

1 8. (Original) The method of claim 1, wherein allocating the available bias
2 between the target edge and the second edge involves ensuring that the first edge
3 bias of the target edge satisfies a minimum spacing requirement between the
4 target edge and each edge in the set of interacting edges.

1 9. (Original) The method of claim 1, wherein allocating the available bias
2 between the target edge and the second edge involves ensuring that the first edge
3 bias of the target edge satisfies a minimum width requirement between the target
4 edge and each edge in the set of interacting edges.

1 10. (Canceled).

1 11. (Original) The method of claim 1, wherein allocating the available bias
2 involves iteratively updating bias allocated to the target edge and the second edge
3 in a manner that satisfies minimum spacing requirements or minimum width
4 requirements.

1 12. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method that facilitates one or more of minimum spacing and width control during
4 an optical proximity correction operation for a mask that is used in manufacturing
5 an integrated circuit, the method comprising:
6 considering a target edge of a first feature on the mask;
7 identifying a set of interacting edges in proximity to the target edge; and
8 performing the optical proximity correction operation, wherein performing
9 the optical proximity correction operation involves applying a first edge bias to
10 the target edge to compensate for optical effects in a resulting image of the target
11 edge;

12 wherein applying the first edge bias to the target edge involves;
13 calculating an available bias based on minimum spacing
14 requirements and/or minimum width requirements, and
15 allocating an the available bias between the first edge bias
16 for the target edge and a second edge bias for at least one edge in
17 the set of interacting edges; and
18 wherein the available bias is allocated based on relative weights assigned
19 to the target edge and the second edge.

1 13. (Original) The computer-readable storage medium of claim 12,
2 wherein applying the first edge bias can involve adding a positive edge bias that
3 increases the size of the first feature or adding a negative edge bias that decreases
4 the size of the first feature.

1 14. (Original) The computer-readable storage medium of claim 12,
2 wherein the second edge belongs to a second feature so that the distance
3 between the target edge and the second edge defines a distance between the first
4 feature and the second feature;
5 wherein applying the first edge bias to the target edge involves satisfying a
6 minimum spacing requirement between the target edge and the second edge.

1 15. (Original) The computer-readable storage medium of claim 14,
2 wherein applying the first edge bias to the target edge additionally involves
3 satisfying a minimum width requirement between the target edge and an opposing
4 edge of the first feature.

1 16. (Original) The computer-readable storage medium of claim 12,
2 wherein the second edge is also an edge of the first feature so that a distance

3 between the target edge and the second edge defines a distance across a gap
4 between portions of the first feature.

1 17. (Original) The computer-readable storage medium of claim 12,
2 wherein the second edge is an opposing edge of the first feature so that a
3 distance between the target edge and the opposing edge defines a width of the first
4 feature; and
5 wherein applying the first edge bias to the target edge involves satisfying a
6 minimum width requirement for the first feature between the target edge and the
7 second edge.

1 18. (Original) The computer-readable storage medium of claim 12,
2 wherein applying the first edge bias to the target edge involves considering an
3 edge type of the target edge and considering an edge type of the second edge.

1 19. (Original) The computer-readable storage medium of claim 12,
2 wherein allocating the available bias between the target edge and the second edge
3 involves ensuring that the first edge bias of the target edge satisfies a minimum
4 spacing requirement between the target edge and the second edge.

1 20. (Original) The computer-readable storage medium of claim 12,
2 wherein allocating the available bias between the target edge and the second edge
3 involves ensuring that the first edge bias of the target edge satisfies a minimum
4 width requirement between the target edge and each edge in the set of interacting
5 edges.

1 21. (Canceled).

1 22. (Original) The computer-readable storage medium of claim 12,
2 wherein allocating the available bias involves iteratively updating bias allocated to
3 the target edge and the second edge in a manner that satisfies minimum spacing
4 requirements or minimum width requirements.

1 23. (Currently amended) An apparatus that facilitates minimum spacing or
2 width control during an optical proximity correction operation for a mask that is
3 used in manufacturing an integrated circuit, the apparatus comprising:

4 an identification mechanism that is configured to identify a set of
5 interacting edges in proximity to a target edge of a first feature; and
6 an optical proximity correction mechanism that is configured to perform
7 the optical proximity correction operation, wherein the optical proximity
8 correction mechanism is configured to add a first edge bias to the target edge to
9 compensate for optical effects in a resulting image of the target edge;

10 wherein applying the first edge bias to the target edge involves calculating
11 an available bias based on minimum spacing requirements and/or minimum width
12 requirements;

13 wherein the optical proximity correction mechanism is
14 configured to allocate ~~an~~ the available bias between the first edge
15 bias for the target edge and a second edge bias for at least one edge
16 in the set of interacting edges; and

17 wherein the available bias is allocated based on relative weights assigned
18 to the target edge and the second edge.

1 24. (Original) The apparatus of claim 23, wherein applying the first edge
2 bias can involve adding a positive edge bias that increases the size of the first
3 feature or adding a negative edge bias that decreases the size of the first feature.

1 25. (Original) The apparatus of claim 23,
2 wherein the second edge belongs to a second feature so that the distance
3 between the target edge and the second edge defines a distance between the first
4 feature and the second feature;
5 wherein while adding the first edge bias, the optical proximity correction
6 mechanism is configured to satisfy a minimum spacing requirement between the
7 target edge and the second edge.

1 26. (Original) The apparatus of claim 25, wherein while adding the first
2 edge bias to the target edge, the optical proximity correction mechanism is
3 configured to satisfy a minimum width requirement between the target edge and
4 an opposing edge of the first feature.

1 27. (Original) The apparatus of claim 23, wherein the second edge is also
2 an edge of the first feature so that a distance between the target edge and the
3 second edge defines a distance across a gap between portions of the first feature.

1 28. (Original) The apparatus of claim 23,
2 wherein the second edge is an opposing edge of the first feature so that a
3 distance between the target edge and the opposing edge defines a width of the first
4 feature; and
5 wherein while adding the first edge bias, the optical proximity correction
6 mechanism is configured to satisfy a minimum width requirement for the first
7 feature between the target edge and the second edge.

1 29. (Original) The apparatus of claim 23, wherein while adding the first
2 edge bias, the optical proximity correction mechanism is configured to consider
3 an edge type of the target edge and to consider an edge type of the second edge.

1 30. (Original) The apparatus of claim 23, wherein while adding the first
2 edge bias, the optical proximity correction mechanism is configured to ensure that
3 the first edge bias of the target edge satisfies a minimum spacing requirement
4 between the target edge and the second edge.

1 31. (Original) The apparatus of claim 23, wherein while adding the first
2 edge bias, the optical proximity correction mechanism is configured to ensure that
3 the first edge bias of the target edge satisfies a minimum width requirement
4 between the target edge and each edge in the set of interacting edges.

1 32. (Canceled).

1 33. (Original) The apparatus of claim 23, wherein while allocating the
2 available bias, the optical proximity correction mechanism is configured to
3 iteratively update bias allocated to the target edge and the second edge in a
4 manner that satisfies minimum spacing requirements or minimum width
5 requirements.

1 34. (Currently amended) A means for facilitating minimum spacing or
2 width control during an optical proximity correction operation for a mask that is
3 used in manufacturing an integrated circuit, comprising:
4 an identification means that is configured to identify a set of interacting
5 edges in proximity to the target edge of a first feature; and
6 an optical proximity correction means for performing the optical proximity
7 correction operation, wherein performing the optical proximity correction
8 operation involves applying a first edge bias to the target edge to compensate for
9 optical effects in a resulting image of the target edge;

10 wherein while applying the first edge bias to the target edge, the optical
11 proximity correction means is configured to:
12 calculate an available bias based on minimum spacing
13 requirements and/or minimum width requirements, and
14 ~~allocate an~~ the available bias between the first edge bias for
15 the target edge and a second edge bias for at least one edge in the
16 set of interacting edges; and
17 wherein the available bias is allocated based on relative weights assigned
18 to the target edge and the second edge.

1 35. (Currently amended) A method of manufacturing an integrated circuit
2 product that facilitates minimum spacing or width control during an optical
3 proximity correction operation for a mask used in manufacturing the integrated
4 circuit, the method comprising:

5 considering a target edge of a first feature on the mask;
6 identifying a set of interacting edges in proximity to the target edge; and
7 performing the optical proximity correction operation, wherein performing
8 the optical proximity correction operation involves applying a first edge bias to
9 the target edge to compensate for optical effects in a resulting image of the target
10 edge;

11 wherein applying the first edge bias to the target edge involves:
12 calculating an available bias based on minimum spacing
13 requirements and/or minimum width requirements, and
14 ~~allocating an~~ the available bias between the first edge bias
15 for the target edge and a second edge bias for at least one edge in
16 the set of interacting edges; and
17 wherein the available bias is allocated based on relative weights assigned
18 to the target edge and the second edge.

1 36. (Currently amended) A mask used in fabricating an integrated circuit,
2 wherein the mask is created through a method that facilitates minimum spacing or
3 width control during an optical an proximity correction operation for the mask,
4 the method comprising:

5 considering a target edge of a first feature on the mask;
6 identifying a set of interacting edges in proximity to the target edge; and
7 performing the optical proximity correction operation, wherein performing
8 the optical proximity correction operation involves applying a first edge bias to
9 the target edge to compensate for optical effects in a resulting image of the target
10 edge;

11 wherein applying the first edge bias to the target edge involves:
12 calculating an available bias based on minimum spacing
13 requirements and/or minimum width requirements, and
14 allocating ~~an~~ the available bias between the first edge bias
15 for the target edge and a second edge bias for at least one edge in
16 the set of interacting edges; and
17 wherein the available bias is allocated based on relative weights assigned
18 to the target edge and the second edge.